

What is Claimed is:

1. A method for implementing a system information broadcasting function in an asynchronous mobile communication system, comprising the steps of:

(a) storing RSIMs(Radio resource controller System Information Messages) generated by information block segments from a radio network controller in a memory;

(b) calculating transmission time points of the RSIMs to the air;

(c) queuing the stored RSIMs in an order of transmission based on the calculated transmission time points with reference to the current time point;

(d) comparing the current time point with the transmission time point of the RSIM to be transmitted the earliest in the queued RSIMs at every preset time interval; and,

(e) transmitting the RSIMs to the air if the current time point and the transmission time point of the RSIM are the same as a result of the comparison.

2. A method as claimed in claim 1, wherein the preset time interval is 20ms.

3. A method as claimed in claim 1, wherein the memory is a channel card.

4. A method for implementing a system information broadcasting function in an asynchronous mobile communication system, comprising the steps of:

(a) receiving a system information renewal message from a radio network controller, and storing all RSIMs generated by information block segments and scheduling parameters contained in the message;

(b) calculating transmission time points of the RSIMs to the air, and forming a queue of RSIMs based on the transmission time points of the all RSIMs according to a set queuing

25 algorithm;

(c) selecting a first element from the queue of the RSIMs at fixed time intervals; and,

(d) transmitting the RSIM to the air when the transmission time point of the RSIM, the selected element, is the same with the current time point.

30 5. A method as claimed in claim 4, further comprising the steps of:

whenever one RSIM is transmitted to the air at fixed intervals, calculating a next transmission time point of the transmitted RSIM; and,

forming a new queue of RSIMs taking the next transmission time point.

35 6. A method as claimed in claim 4, wherein the next transmission time point SFN_{tx} of the RSIM is calculated according to the following algorithm.

$$\text{SFN}_{\text{tx}}(i+1) = (\text{SFN}_{\text{tx}}(i) + \text{SEG_POS}) \% 4096 \quad (0 \leq i \leq M-1)$$

Where, 'i' denotes (I)th SFN_{tx}, and 'M' denotes a greatest value that satisfies IB-REP*n<4096.

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7. A method as claimed in claim 4, wherein the preset time interval is 20ms.

8. A method as claimed in claim 4, wherein the memory is a channel card.

45 9. A method as claimed in claim 4, wherein the transmission time point of the RSIMs is calculated according to the following algorithm.

$$\text{tempSFN}_{\text{tx}} = \text{Round}(\text{modify_time} \% \text{IB_REP}) * \text{IB_REP} + \text{SEG_POS}$$

if tempSFN_{tx} ≤ modify_time

then tempSFNTx = tempSFNTx + IB_REP

50 SFNTx = tempSFNTx % 4096

Where, the transmission time point value SFNTx is calculated with reference to the modify_time, and represents a transmission time point each of the RSIMs is to be transmitted to the air, and the modify_time is information contained in the system information renewal message from the mobile switching center, and represents a time point at which transmission
55 of the RSIMs contained in the message to the air is initiated according to given parameters.

10. A method as claimed in claim 4, wherein each of the elements of the queue of the RSIMs has a transmission time point calculated according to scheduling parameters of the RSIMs the element indicates.

60 11. A method as claimed in claim 10, wherein the parameters include;

an SIB_REP representing intervals the system information blocks are transmitted to the air, and

SIB_POS representing a location of each system information block segment within a
65 transmission period.

12. A method as claimed in claim 4, wherein each of the elements of the queue of the RSIMs includes an address of the RSIM, and a transmission time point of the RSIM.

70 13. An asynchronous mobile communication system comprising:

a first signal processing part for processing a system update message received from a radio network controller;